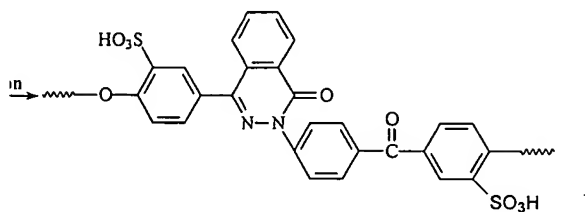


## THE CLAIMS

The claims of the application, as amended, are:

1. – 14. (Canceled)

15. (Currently amended) Sulfonated poly(phthalazinones) consisting essentially of units of structural formula I.

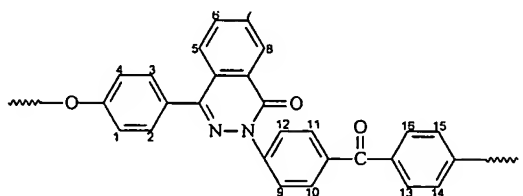


wherein the degree of sulfonation is in the range of 0.6 to 1.0 ~~±.2~~.

16. (Currently amended) Sulfonated poly(phthalazinones) consisting essentially of units of structural formula I as defined in Claim 15, in the form of a membrane.

17. (Canceled)

18. (Currently amended) A process for the preparation of sulfonated poly(phthalazinones) consisting essentially of units of structural formula I as defined in claim 15, and having a degree of sulfonation in the range of 0.6 to 1.0, comprising reacting poly(phthalazinones) of formula II



at room temperature with a sulfonating agent, wherein the sulfonating agent is a mixture of 95-98% concentrated sulfuric acid and 27-33% fuming sulfuric acid with different acid ratios in the range of fuming sulfuric acid to concentrated sulfuric acid of 5/5 to 7/3, wherein the degree of sulfonation (~~DS~~) is controlled by varying the ratio of concentrated sulfuric acid to fuming sulfuric acid and the reaction time.

19. - 24. (Canceled)

25. (Previously presented) A process according to claim 18, including the additional step of casting the sulfonated poly(phthalazinones) to form a membrane.

26. - 32. (Canceled)

33. (Currently amended) A membrane electrode assembly for use in a fuel cell comprising: (a) an anode, (b) a cathode; and (c) a solid polymer electrolyte membrane between said anode and said cathode, said solid polymer electrolyte membrane comprising a sulfonated poly(phthalazinone) consisting essentially of units of structural formula I as defined in claim 15, and having a degree of sulfonation in the range of 0.6 to 1.0.

34. (Currently amended) A method of producing a fuel cell, comprising the steps of forming a solid polymer electrolyte membrane using the sulfonated poly(phthalazinone) consisting essentially of units of structural formula I as defined in claim 15, and having a degree of sulfonation in the range of 0.6 to 1.0; and assembling said solid electrolyte membrane between an anode and a cathode to provide a membrane electrode assembly.